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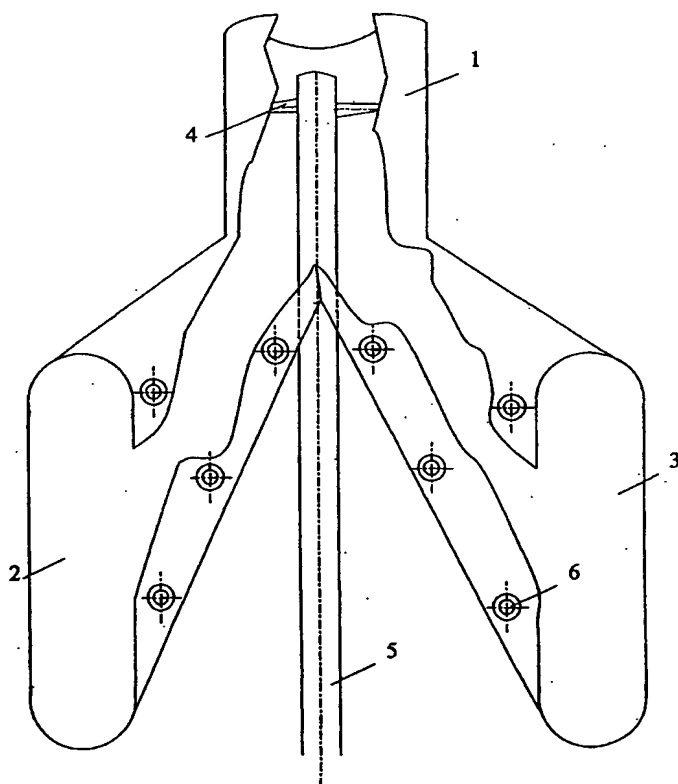
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Declarations under Rule 4.17:

— as to the applicant's entitlement to claim the priority of the
earlier application (Rule 4.17(iii)) for the following desig-
nation CA

[Continued on next page]

(54) Title: A FRONT-MOUNTED WATER-SEPARATION PROPELLER



Diagram

(57) Abstract: Based on the law of dynamic water-sep-
aration, in this invention, a new type of front-mounted
booster water-separation propeller has been designed to
raise a vessel's speed by reducing resistance from water
and increasing the advance force. It's composed of two
parts, of which the external includes an influent tube (1),
a left thin, flat gushing gutter (2), a right thin, flat gush-
ing gutter (3), and screwed connections (6), of which in-
terior includes a booster (4) and its axle (5). Both parts
can be changed independently.

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— of inventorship (Rule 4.17(iv)) for US only

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A FRONT-MOUNTED WATER-SEPARATION PROPELLER

TECHNICAL FIELD

This invention refers to a new type of water-separation propeller that will be installed in front of the vessel.

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BACKGROUND OF INVENTION

Nowadays, there is no dynamic installation in the field of ship's propeller, by which the frontal resistance may greatly reduce and the advance force may increase, as to raise the vessel's speed. It's known that the density of water is over 800 times higher than that of air. When a vessel is navigating, it encounters resistance from water. Its frontal resistance from water amounts to more than 80% of the total resistance. Therefore, it is less effective to raise the vessel's speed by the means of either changing the external structure of the vessel or singly enhancing the advance force.

15 CONTENTS OF INVENTION

- This new type of propeller is composed of an influent tube, a left thin, flat gushing gutter, a right thin, flat gushing gutter, a booster and its axle, and screwed connections. The booster sucks the water through the influent tube right from the front of the vessel, and then conveys the water with high speed by both wing-like gushing gutters to the side back of the vessel.
- 20 This gushing high-speed water can largely push the vessel forward. Meanwhile, with the raise of speed of the vessel, the frontal resistance from water increases, the gushing water with high speed from both sided-gutters will forms into a water-separation force in front of the vessel, as a result of reduce of resistance. Moreover, this gushing water may become turbulence to reduce the useless efficiency caused by the induced-flow.
- 25 This inventive design is structurally simple, costly low, ensuring no need to change the current configuration while attaching on the vessel. Compared to the current technology in this area, it fills the blank with front-mounted water-separation propeller. It may also play an energy-conservation, environment-protection role.

BRIEF EXPLANATION OF ATTACHED DIAGRAMS

Diagram 1 is a cross-sectional view of the structure of this invention, in which,

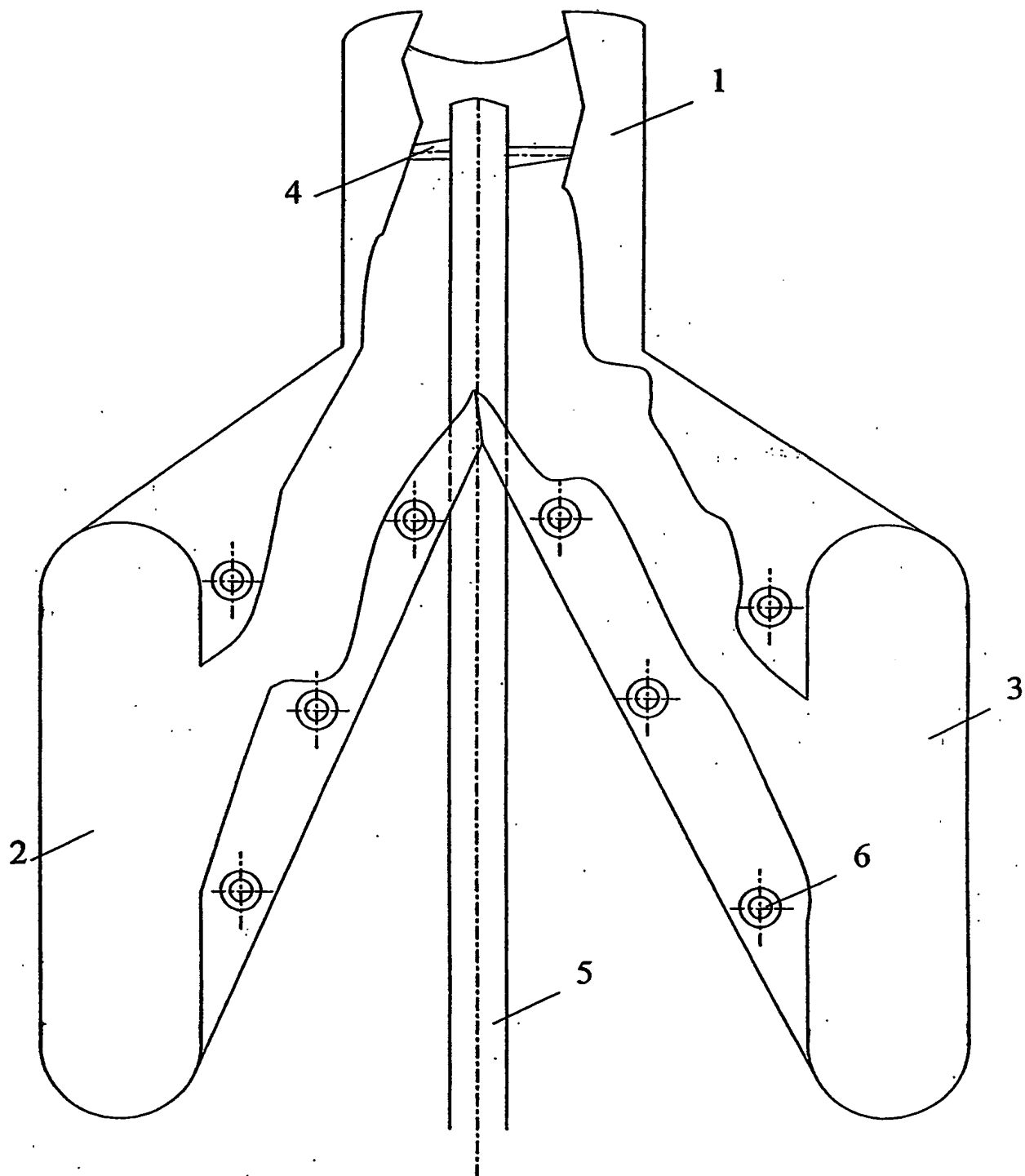
1= influence tube, 2= left thin, flat gushing gutter, 3= right thin, flat gushing gutter, 4= booster, 5= axle of booster, 6= screwed connection.

- 5 From attached diagram, you may find the propeller of this invention consists of influence tube 1, left thin, flat gushing gutter 2, right thin, flat gushing gutter 3, and screwed connection 6, being as the external part of this invention, and booster 4, axle of booster 5, being as the interior part. Screwed connections are the parts of attaching this invention on the front of vessel.
- 10 In this invention, this propeller will start to push the vessel when the flowing speed in the influence tube 1 is higher than the speed of vessel, and the efficiency of water-separation and advance will increase with the ratio of the flowing speed in the influence tube 1.

CLAIMS

1. A type of front-mounted booster, water-separation propeller, of which the feature lies in its composition of an influence tube, a left thin and flat gushing gutter, a right thin and flat gushing gutter, a booster and its axle, screwed connections. An influence tube, a left thin and flat gushing gutter, a right thin and flat gushing gutter and screwed connections
5 compose the external part of this invention; and a booster and its axle compose the interior part of it. This inventive installation will be attached on the vessel with screwed connections.
2. According to the front-mounted booster, water-separation propeller above-mentioned in claim 1, the invention consists of the feature that the two thin, flat gushing gutters, of
10 which the directions are open toward side back of the vessel.
3. According to the front-mounted booster, water-separation propeller above-mentioned in claim 1 or 2, the invention consists of the feature that the direction of the influence tube is open toward right front of the vessel.
- 15 4. According to the front-mounted booster, water-separation propeller above-mentioned in claim 1, 2, and 3, the invention consists of the feature that the sum of the areas of the outmost cut-off planes of two gushing gutters is equal to the area of the cut-off plane of influence tube.
5. According to the front-mounted booster, water-separation propeller above-mentioned in claim 1, 2, 3, and 4, the invention consists of the feature that external part of this
20 invention which is composed of an influence tube, a left thin and flat gushing gutter, a right thin and flat gushing gutter and screwed connections, is an independently changeable part.
6. According to the front-mounted booster, water-separation propeller above-mentioned in claim 1, 2, 3, 4 and 5, the invention consists of the feature that the interior part which is
25 composed of a booster and its axle is an independently changeable part.

1/1



Diagram

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B63H5/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B63H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 379 834 A (SHARP RENWICK J) 3 July 1945 (1945-07-03) figures 1,2,4,6	1-6
X	US 3 841 258 A (ODAWARA C) 15 October 1974 (1974-10-15) figure 6	1-6
X	US 3 688 721 A (BENNETT JOHN D) 5 September 1972 (1972-09-05) figures 1,2	1-6
A	FR 994 261 A (PETZL, E) 14 November 1951 (1951-11-14) figure 1	1,2
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2 270 690 A (SHANNAHAN SAMUEL V) 20 January 1942 (1942-01-20) figures 1,7	1-3
A	US 2 616 385 A (WOODS ANTHONY A) 4 November 1952 (1952-11-04) figure 1	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

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